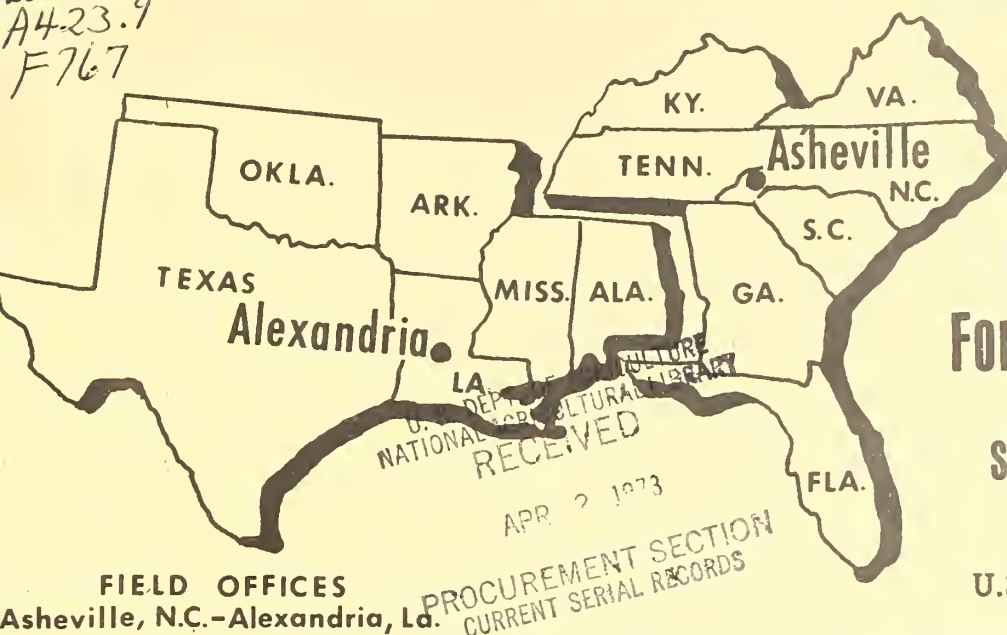


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Southern Forest Pest Reporter

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ENVIRONMENTAL PROTECTION AND IMPROVEMENT Forest Pest Management Southeastern Area STATE AND PRIVATE FORESTRY

FOREST SERVICE
U.S. DEPT. OF AGRICULTURE
March 1973

1720 PEACHTREE ST. N.W. ATLANTA GA. 30309

SUMMARY OF CONDITIONS



....Southern pine beetle activity and population levels remained moderate to high with outbreaks expanding in areas already affected. Suppression efforts continued to stress removal of infested trees before the beetles become active in the spring, although salvage efforts were hampered by a very wet fall and winter. The beetle populations were little affected by the mild winter throughout the South; an increase in size and intensity of the outbreak is expected to occur during the coming spring and summer months. Suppression efforts included 195,351 cords and 108.4 MMBF of timber salvaged since July, 1972.



....Black turpentine beetle activity was building up in slash pine plantations in South Carolina. Higher losses than usual occurred in Mississippi.



....Oak wilt was confirmed in eastern North Carolina. It was isolated from water oaks near Kinston, Lenoir County, in November, 1972.

....Fusiform rust was relatively low in State forest tree nurseries in Alabama, South Carolina, and Georgia. However, severe infections were observed in northern Florida nurseries.



....Damping off caused by Fusarium sp. was observed in container-grown long leaf pine at the Stuart Seed Orchard. The extensive losses of last spring did not reoccur.

....Field plot data indicated that the pre-planting soil fumigant MC-33 was most effective in controlling cylindrocladium root rot in black walnut and yellow poplar seedbeds in an eastern North Carolina nursery.

STATUS OF FOREST INSECTS

Pine Bark Beetles

SOUTHERN PINE BEETLE, Dendroctonus frontalis Zimm.

ALABAMA Southern pine beetle activity remained high in Alabama. Even during the winter months, the Alabama Forestry Commission detected an average of 40 new spots per county each month. The Commission feels the figure could be increased by 50 percent due to the large number of green infested trees that go undetected. The State of Alabama salvaged 36.9 MMBF and 107,600 cords during the first half of FY 1973.(Alabama Forestry Commission).

Beetle populations were high on three of the National Forests in Alabama. The heaviest losses occurred on the Bankhead National Forest where 500 MBF and almost 300 cords were salvaged during the month of January. Activity on the Talladega National Forest and the Conecuh National Forest decreased somewhat; losses for these two Forests were still moderately high. The National Forests in Alabama salvaged 2.9 MMBF and 2,237 cords during the first half of FY 1973.

ARKANSAS Southern pine beetle remained a problem in two counties in south Arkansas. The highest activity was in the southeast half of Ashley County. Preliminary results of recent detection surveys indicated that beetle activity remains high. Beetle losses in Union County were confined to the southeast portion; a recent detection survey indicated that the infestation may be spreading. Salvage activity slowed down considerably due to wet weather during the winter months. Since mid-December the State chemically treated 49 spots which contained 3,100 trees and salvaged 690 MBF and 2,328 cords since July 1972. (Arkansas Forestry Commission).

GEORGIA Southern pine beetle activity continued to cause heavy losses on State and private lands in 46 north and central Georgia counties. In north Georgia heavy infestations remained on the Tallulah and Chattooga Districts of the Chattahoochee National Forest. Populations developed to severe outbreak conditions on the Brasstown Ranger District. An estimated 2,758 infested trees were detected on this District. Beetle activity also appeared to be expanding into the adjoining Toccoa Ranger District.

The outbreak in central Georgia on the Uncle Remus District of the Oconee National Forest, the Hitchiti Experimental Forest and Piedmont National Wildlife Refuge continued at a high level.

SOUTHERN PINE BEETLE (Cont'd)

GEORGIA (Cont'd)

State, private, and Federal land managers worked vigorously to remove the infested timber through commercial sales. The Georgia Forestry Commission contacted more than 2,325 individual landowners about southern pine beetle infestations since the outbreak began. From July 1 to February 1, 15,608 cords and 7,952 MBF of pine timber were salvaged.

Heavy woodpecker predation on the beetle was observed in Upson and Hurd Counties, but in the Atlanta area little predation occurred.

LOUISIANA

Southern pine beetle activity in this State continued to decrease; it is difficult to determine, however, whether there has been an actual decline in the southern pine beetle population or whether the decline was that normally associated with winter. Recent flights over approximately 65 percent of the State detected 322 new spots; the Louisiana Forestry Commission feels that the figures were conservative because of the difficulty in detecting green infested trees from the air. Louisiana also experienced difficulties in their salvage operations because of the wet weather. Total suppression efforts for this State during the first half of FY 1973 included 16.5 MMBF and 30,816 cords. (Louisiana Forestry Commission).

The results of a recent biological evaluation on the Kisatchie National Forest should show a marked decrease in southern pine beetle activity. There were approximately 5 infested trees per M acres of host type on the Forest. In addition, very few green infested trees were found during the ground check. Suppression efforts for the Kisatchie National Forest included 1.7 MM board feet and 1,831 cords during the first half of FY 1973.

MISSISSIPPI

The State of Mississippi detected southern pine beetle infestations in Yazoo County bringing the total outbreak area to 17 counties. The four counties located in central Mississippi along the Alabama line currently have the least amount of southern pine beetle activity. The Mississippi Forestry Commission feels that suppression efforts in these four counties was successful with little or no increase in beetle activity. The remaining infested counties located in southwestern Mississippi had a higher level of southern pine beetle activity. A recent flight over Copiah County, the most heavily infested in the State, detected 91 new spots. Although the State has done no chemical control work thus far, two spray crews were scheduled to start work at the end of February and a third crew started the first week in March. The State salvage suppression efforts since July 1972 total 135 MBF and 1,900 cords. (Mississippi Forestry Commission).

The Homochitto National Forest salvaged 1.4 MMBF during the first half of FY 1973.

SOUTHERN PINE BEETLE (Cont'd)

NORTH CAROLINA

Southern pine beetle activity increased in several areas of North Carolina including rapidly expanding populations on the National Forests in North Carolina. New outbreaks occurred on 86 M acres of the Pisgah District, 40 M acres on the Grandfather District, 365 M acres of the Highlands District, and 390 M acres on the Wayah District. Severe infestations were also observed on the Cherokee Indian Reservation and the adjoining Great Smoky Mountains National Park.

The outbreak which began on the Tusquitee District in 1967 continued at a high level. An evaluation of the 374 M acre outbreak conducted in January revealed 380 infested trees per M acres of host type.

There were more than 40 counties involving 6.7 million acres of forested land under attack by the southern pine beetle in North Carolina.

Salvage programs continued throughout the State. Removal of beetle attacked trees for FY 1973 amounted to 5,775 MBF and 6,443 cords from State and private lands and 1,390 MBF from Federal lands.

SOUTH CAROLINA

The outbreak remained at a high level on 1.7 million acres in South Carolina. Spartanburg County suffered the heaviest losses of the nine counties involved in the outbreak. The South Carolina Commission of Forestry expects southern pine beetle populations to increase throughout the current outbreak area in 1973.

Outbreaks on Federal lands in the State covered 800 M acres and included all districts on the Francis Marion and Sumter National Forests in addition to the Kings Mountain National Military Park.

Approximately 5 M cords and 5 MMBF of timber were salvaged on State, private and Federal lands.

TENNESSEE

Southern pine beetle activity was limited to the extreme eastern end of the State and was part of the general outbreak in the Southern Appalachian Mountains. The Great Smoky Mountains National Park had a 20,000 acre area near Gatlinburg, Tennessee with many beetle spots containing a thousand or more red and fading trees.

The outbreak on the Tellico District of the Cherokee National Forest declined considerably since the summer of 1972 with most of the activity confined to about 5,000 acres. A February evaluation found less than 1 spot per M acres of host type on the District.

SOUTHERN PINE BEETLE (Cont'd)

- TENNESSEE (Cont'd) A new outbreak developed on the Hiwassee District of the Cherokee National Forest. A reconnaissance survey revealed several large spots on both Federal and private lands. An evaluation of the outbreak is underway.
- TEXAS Texas reported continued southern pine beetle activity during November and December. This sustained beetle activity prompted more intensive winter control efforts than in past years. A recent analysis of the 1972 detection data revealed that 4,716 southern pine beetle spots containing 454,230 trees were found during the calendar year. The State salvaged approximately 25.1 MMBF and 9,540 cords during the first half of FY 1973. These salvage figures were an estimate of the volume contained in the 333,774 trees which were cut during suppression activities. (Texas Forest Service).
- Southern pine beetle activity on the National Forest in Texas continued high. Salvage suppression efforts for the seven Ranger Districts in the four National Forests of east Texas totaled approximately 3.2 MMBF and 2,550 cords for the first half of FY 1973.
- VIRGINIA Southern pine beetle populations expanded tremendously in Virginia during the past six months. The previous outbreak which involved 16 central Piedmont Counties of Virginia extended westward to include the forests of the Southern Appalachian Mountains.
- Populations increased significantly on the Glenwood District of the Jefferson National Forest and the Pedlar District of the George Washington National Forest. Evaluations during January revealed 881 and 164 infested trees per M acres, respectively, on these Districts.
- An evaluation of the Lee Experimental Forest found an estimated 1,652 infested trees per M acres of host type.
- State and Federal agencies continued an aggressive suppression program. The Virginia Division of Forestry checked more than 1,500 spot infestations and assisted landowners in salvaging approximately 10,000 cords of pine from beetle infestations.
- BLACK TURPENTINE BEETLE, Dendroctonus terebrans (Oliv.)
- ARKANSAS The State reported scattered occurrences of activity for this insect in association with Ips beetles. (Arkansas Forestry Commission).

BLACK TURPENTINE BEETLE (Cont'd)

- MISSISSIPPI Reports of higher than usual losses during late fall and early winter due to black turpentine beetle - Ips beetle associations were received from Mississippi. The increase in activity was attributed to a dry summer and unusually high intensity of lightning strikes. (Mississippi Forestry Commission).
- SOUTH CAROLINA Populations of the black turpentine beetle appeared to be building up in thinned slash pine plantations near Rock Hill, South Carolina. Trees in non-thinned stands were also attacked and killed by this beetle.
- TEXAS The Texas Forest Service districts in northern part of the State reported black turpentine beetle attacks primarily in conjunction with construction or logging damage. Lindane spray was the primary control method used. (Texas Forest Service).
- Limited activity was reported on the National Forests in Texas. The Trinity District of the Davy Crockett National Forest reported salvaging 3.3 MBF killed and infested by the black turpentine beetle.
- IPS ENGRAVER, Ips sp.
- ALABAMA Ips beetle infestations were a problem; however, the possibility for serious buildup exists in the areas damaged by the ice storm. (Alabama Forestry Commission).
- ARKANSAS The potential for Ips buildup exists in the areas damaged by the ice storm.
- GEORGIA The Georgia Forestry Commission reported a general increase of Ips beetle activity in southern Georgia.
- LOUISIANA Most of the Ips beetle activity was reported from the north-central portion of the State. No serious problem existed. (Louisiana Forestry Commission).
- TEXAS Ips beetle activity was slight throughout the fall and winter months. A few spots of up to 100+ trees were reported in plantation areas with most of these spots controlled through salvage. (Texas Forest Service).

PINE DEFOLIATORS

RED HEADED PINE SAWFLY, Neodiprion lecontei (Fitch)

- LOUISIANA Approximately 100 acres in a young pine plantation were severely damaged in Caddo Parish in northwestern Louisiana. Recent investigations revealed high mortality due to repeated severe defoliation.

RED HEADED PINE SAWFLY (Cont'd)

- LOUISIANA (Cont'd) The Commission stated that the area may have to be replanted. (Louisiana Forestry Commission).
- MISSISSIPPI Approximately 32,000 acres of loblolly and shortleaf pine were infested in Lowndes County in eastern Mississippi. (Mississippi Forestry Commission).

REPRODUCTION WEEVILS

PALES WEEVIL, Hylobius pales (Herbst)

- ALABAMA Heavy damage to 100 acres of loblolly pine seedlings was caused by the pales weevil, Hylobius pales (Herbst) and/or the pitch eating weevil, Pachylobius picivorus (Germ.) on the Bankhead National Forest. An evaluation of the weevil population on the area is scheduled in the spring.
- NORTH CAROLINA Efforts to find a substitute for aldrin and DDT to control the pales weevil were continued. The Southeastern Forest Experiment Station and S&PF's Forest Pest Management Group cooperated in field experiments on land generally set aside by the Federal Paper Board Company in the Green Swamp of North Carolina. This year the tests included Dursban and Imidan at varying dosage levels, and with several sticker-extenders, and Carbofuran, both as a granular nursery bed treatment and incorporated into the normal clay slurry root dip. The carbofuran-clay slurry treatment was included in a cooperative effort with Weyerhaeuser Company which was testing this treatment in Arkansas.
- The Forest Pest Management Group tentatively plans a pilot test in 1974 to determine efficacy under field conditions of the best of the above treatments.
- MISSISSIPPI Moderate to heavy damage was found in loblolly and shortleaf pine seedling plantations in the northern and central portions of the State. (Mississippi Forestry Commission).

HARDWOOD DEFOLIATORS

FALL WEBWORM, Hyphantria cunea (Drury)

- MISSISSIPPI Moderate to heavy infestations were found scattered throughout the State on pecan, hickory, and oak. (Mississippi Forestry Commission).

SEED ORCHARD INSECTS

NANTUCKET PINE TIP MOTH, Rhyacionia frustrana (Comst.)

- ARKANSAS Light to moderate infestations of tip moth continued on the Ouachita Seed Orchard. Considerable damage caused by the overwintering population was expected in the spring. Control efforts were planned.
- LOUISIANA Damage caused by tip moths was kept to a minimum last season by properly timed application of Cygon at the Stuart Orchard. However, damage to shortleaf pine was expected to continue in the spring; control efforts were planned.
- MISSISSIPPI Tip moth damage at the Erambert Seed Orchard was light last season and no severe damage was expected in the early spring this year.

SCALE INSECTS (Coccidae)

- LOUISIANA A light population of scale, Toumeyella sp. occurred on shortleaf pine with an occasional tree being heavily infested at the Stuart Seed Orchard.
- MISSISSIPPI A light to heavy infestation of an undetermined scale insect was found scattered throughout Mississippi longleaf at the Erambert Orchard.

MIDGE, Contarinia sp.

- MISSISSIPPI Light to heavy damage to loblolly pine needles by midge occurred at the Erambert Orchard.

CONEWORM, Dioryctria sp.

- LOUISIANA Coneworm damage to tips and cones was evident in the Stuart and
& Erambert Orchards. The extent of the damage caused by these insects
MISSISSIPPI at these areas was not known at this writing.

MISCELLANEOUS INSECTS

BALSAM WOOLLY APHID, Adelges piceae (Ratz.)

- NORTH Interpretation of infrared photography of balsam woolly aphid infesta-
CAROLINA tions on Roan Mountain revealed 2,000 red and fading trees. Nearly
& all these aphid-killed trees were outside the protection zone.
TENNESSEE

MISCELLANEOUS INSECTS (Cont'd)

SMALLER EUROPEAN ELM BARK BEETLE, Scolytus multistriatus (Marsh.)

MISSISSIPPI Moderate infestations of this insect were found in rural and urban areas throughout the State. (Mississippi Forestry Commission).

TEXAS TOWN ANT, Atta texana (Buckley)

TEXAS Infestations of this insect were concentrated in San Augustine, Nacogdoches, and Shelby Counties. These infestations were treated with Mirex. (Texas Forest Service).

The Angelina National Forest detected an infestation covering 541 acres of longleaf pine. The Neches District of the Davy Crockett National Forest found an infestation of approximately 1 acre.

ICE DAMAGE

ALABAMA An ice storm in January caused moderate to severe damage in five counties in northern Alabama. DeKalb, Cherokee, Madison, Franklin, and Winston Counties were the counties involved. The heaviest damage occurred on the trees bordering roads where limbs were broken off, tops were snapped and some trees were uprooted. Again in early February a severe snowstorm preceded by sleet caused moderate to severe damage in Barbour, Bullock, Dale, and Pike Counties in southeast Alabama. (Alabama Forestry Commission).

ARKANSAS In southern Arkansas the heaviest ice damage occurred in the southeast half of Ashley County. The storm damaged approximately 5.5 MMBF and 50,000 cords. (Arkansas Forestry Commission).

LOUISIANA The ice damage in northern Louisiana was located primarily above highway Interstate-20. The heaviest damage with losses up to 80 percent occurred in slash plantations. In one case a landowner near Minden, Louisiana, was forced to clearcut his stand. The loblolly stands suffered far less damage. An estimated 10 percent loss due to breakage occurred with some additional trees being root sprung or bent over.

MISSISSIPPI Ice in Webster and Chickasaw Counties near the Dancy, Mississippi area cost the Natchez Trace Parkway \$26,000 for removal of broken material.

ICE DAMAGE (Cont'd)

TEXAS

The State of Texas suffered very little ice damage although a slash pine plantation in southern Hardin County suffered moderate losses. This plantation was previously wind damaged and therefore more susceptible to ice storm damage. (Texas Forest Service).

STATUS OF FOREST DISEASES

Shade Tree Diseases

OAK WILT caused by Ceratocystis fagacearum (Bretz) Hunt

NORTH CAROLINA

Oak wilt was confirmed on water oaks (Quercus nigra L.) near Kinston (Lenoir County), North Carolina, in November 1972. This infection was approximately 200 miles east of any previously known oak wilt in the State. Approximately 18 trees were detected in a homeowner's yard and ranged in size from small saplings to trees over 36 inches dbh. (Dr. Larry Grand, North Carolina State University).

FOREST AND PLANTATION DISEASES

WHITE PINE BLISTER RUST caused by Cronartium ribicola Fischer

NORTH CAROLINA

Ribes sp. eradication projects were proposed by the States of North Carolina and Virginia and the Shenandoah National Park for the spring of 1973. Cooperative control projects were conducted with all three of the above agencies in 1972.

LITTLELEAF DISEASE

KENTUCKY

Littleleaf disease symptoms were observed on shortleaf pine trees in stands on the Daniel Boone National Forest in Kentucky in November 1972. The damage was distributed over approximately 10,000 acres of forest land underlain by a heavy clay soil.

NURSERY AND SEED ORCHARD DISEASES

FUSIFORM RUST caused by Cronartium fusiforme Hedge. & Hunt

ALABAMA & SOUTH CAROLINA

Fusiform rust nursery infection on loblolly and slash pines was relatively low in State nurseries in these two states during 1972. Rust infection on unsprayed check plots was less than 10 percent at the Tilghman (South Carolina) State Nursery, and less than 5 percent at

FUSIFORM RUST (Cont'd)

ALABAMA
&
SOUTH
CAROLINA

the Hauss (Alabama) State Nursery. Preliminary data analysis also showed no significant difference between standard ferbam spray treatments applied during the periods April or May-June 1 and April or May-July 1. Therefore, the majority of rust infection apparently occurred at these two nurseries before June 1 in 1972.

GEORGIA
&
FLORIDA

Fusiform rust nursery infection on loblolly and slash pines was abnormally high in two nurseries in these two states in 1972. Rust infection on unsprayed slash pine and loblolly pine check plots was over 50 percent and 30 percent, respectively, at the Buckeye Cellulose Corporation Nursery near Perry, Florida. Very heavy rust infection was also observed at the Davisboro (Georgia) State Nursery where over 60 percent and 70 percent infection occurred on slash and loblolly pines, respectively. Severe infection (over 40 percent) occurred on slash pine seedlings sprayed with ferbam from germination until July 1 at the Perry Nursery. However, very good rust control was achieved at the Davisboro, Georgia, nursery where only 2-3 percent rust infection was observed on slash and loblolly pine seedling plots sprayed with ferbam until July 1.

LOUISIANA

Damping-off of container grown longleaf pine seedlings was observed in greenhouses at the Stuart Seed Orchard. Extensive losses such as occurred last spring did not occur. Losses this fall were estimated to be less than 1 percent. Most of the mortality was due to top damping-off caused by Fusarium. The fungus became established in the cotyledons of seedlings that failed to cast their seed coats after germination. The fungus then progresses down the cotyledons eventually killing the seedlings. Abundant sporulation occurred on many of the diseased seedlings but the fungus failed to spread rapidly throughout the greenhouse as it did last year. Improved sanitation practices and cool weather conditions probably restricted the spread of the fungus. Isolation data from the seeds of five longleaf pine seed sources suggested that 8-20 percent of the seeds had Fusarium present on their seed coat. This infested seed was probably the most important source by which Fusarium was introduced into the greenhouse. Soaking the seeds for 24 hours in a 3 percent hydrogen peroxide solution was effective in eliminating Fusarium from the seeds.

Fusiform rust was heavy at the Beauregard Nursery on slash pine seedlings. About 25 percent of the slash pine was infected. In an unsprayed study area about 33 percent of the slash pine was infected. Loblolly pine was not as badly infected with less than 1 percent being diseased.

FUSIFORM RUST (Cont'd)

MISSISSIPPI About 1 to 2 percent of the slash and loblolly pine at the Ashe Nursery were infected with fusiform rust. In unsprayed areas 4 percent of the loblolly pine and 6 percent of the slash pine were infected.

CYLINDROCLADIUM ROOT ROT caused by Cylindrocladium scoparium and C. floridanum

NORTH
CAROLINA

Preliminary field plot data results show that the pre-planting soil fumigant MC-33 was most effective in controlling cylindrocladium root rot in black walnut and yellow-poplar seedbeds at the Griffith State Nursery at Clayton, North Carolina, in 1972. The MC-33 was injected into the soil at 6-inch and 12-inch depths at the dosage rate of 700 pounds per acre. Fumigated yellow-poplar plots had less than 10 percent infection compared with over 50 percent infection on untreated check plots. However, control success on black walnut fumigated plots was considerably poorer with approximately 65 percent infection on fumigated plots compared with 100 percent infection on untreated check plots. The two systemic fungicides Benlate and Mertect gave relatively poor root rot control results. This was a cooperative project with the North Carolina Division of Forestry.

Results obtained from a cylindrocladium root rot outplanting study with black walnut seedlings at the Clayton, North Carolina, nursery showed over 90 percent survival after one year. Survival of 1-0 black walnut seedlings with less than 10 percent (tips of tap roots) infection was over 95 percent. This was a continuing 5-year cooperative study with the North Carolina Division of Forestry. A similar study is being established on the Chickasaw State Forest in western Tennessee with the Tennessee Division of Forestry with infected 1-0 yellow-poplar seedlings.

ANNOSUS ROOT ROT caused by Fomes annosus (Fr.) Cke.

TENNESSEE

Fomes annosus continued to cause infection and mortality in the Hiwassee Land Company Seed Orchard near Greenback, (eastern) Tennessee. Results of a 100 percent survey of the 1500-tree loblolly pine seed orchard in December 1972 revealed 56 infected trees. In addition, 14 trees were killed. The company attempted to control the disease in this high-value orchard using the fungicides Benlate and Dexon as soil drenches and injections around each tree.

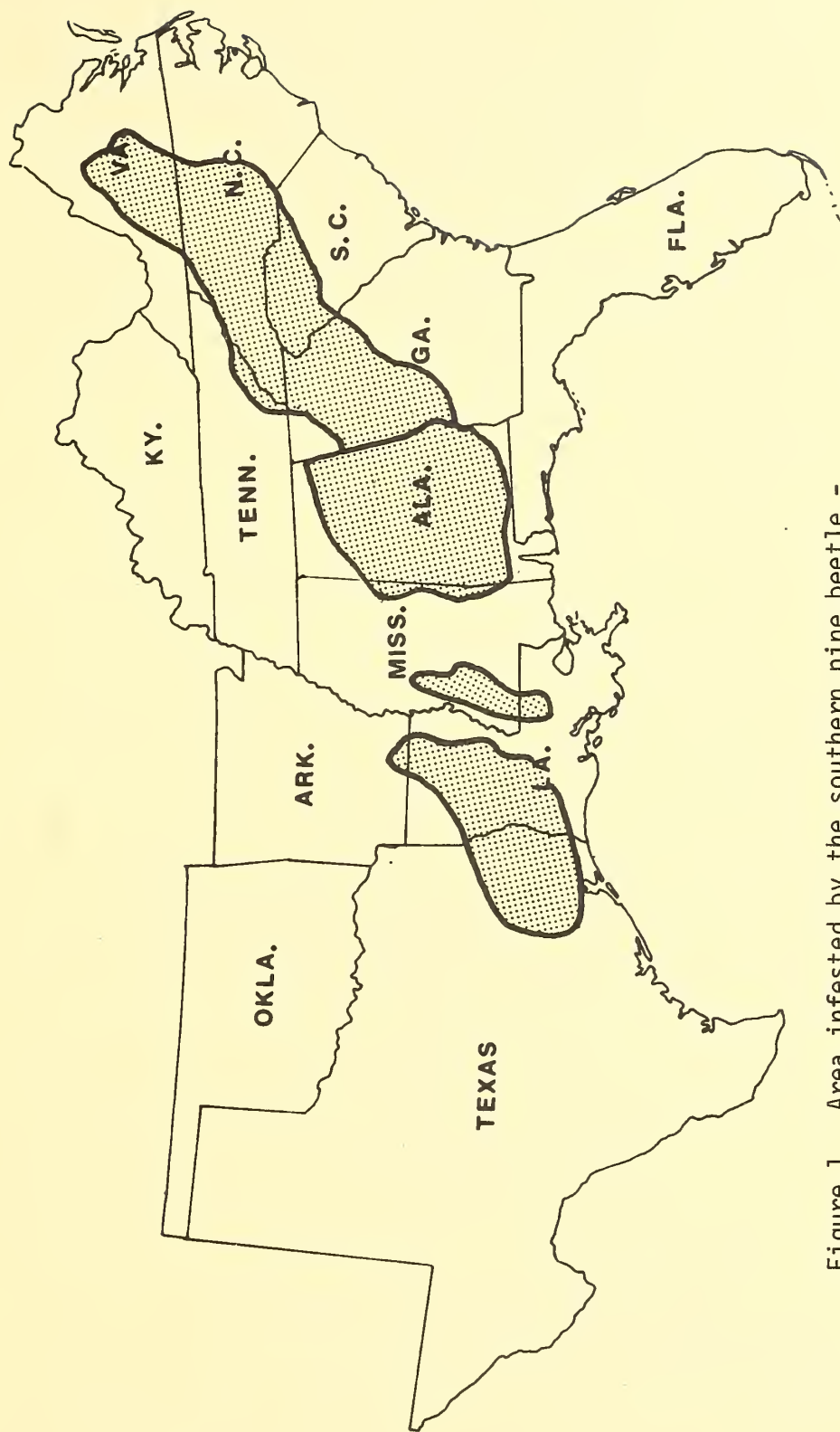


Figure 1. Area infested by the southern pine beetle -
March 1973.

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